CLAIMS

1. A belt-fed machine gun for firing a multiplicity of cartridges encased in sleeves and linked to form a belt, said belt-fed machine gun including:

a plurality of substantially parallel barrels mounted for circumrotation;

a plurality of cradles for supporting the cartridges encased in the sleeves, said cradles being mounted for circumrotation with said plurality of substantially parallel barrels wherein a number of the plurality of cradles in an operative position are aligned coaxially with corresponding barrels;

a housing and a breechblock, wherein said housing and said number of cradles in the operative position engage sleeves encasing cartridges to form chambers with said breechblock, and said breechblock further includes a guide to engage with the cartridges or sleeves for urging said cartridges and sleeves towards said corresponding barrels; and

a firing mechanism for initiating a propellant charge in one or more of the cartridges supported by cradles in the operative position.

2. The belt-fed machine gun of claim 1 wherein the guide includes a camming surface to urge the cartridges and sleeves into sealable engagement with a barrel.

3. The belt-fed machine gun of either claim 1 or claim 2 wherein the breechblock and the housing are formed as an integral member.

4. The belt-fed machine gun of any one of claims 1 to 3 wherein the inner wall of the housing is shaped such that it tightly engages the sleeves to form a sealed chamber at a firing station.

5. The belt-fed machine gun of any one of claims 1 to 4 wherein the chambers are formed by the housing engaging the sleeves and the linkages therebetween.

6. The belt-fed machine gun of any one of claims 2 to 5 wherein the guide is in the form of a cam which urges the cartridges into sealable engagement with the barrel for firing.

7. The belt-fed machine gun of any one of claims 1 to 6 wherein the cradles are formed as channels in the external surface of a cylinder.

8. The belt-fed machine gun of any one of claims 1 to 7 wherein the cradles are shaped to conform to the outer profile of the sleeves.

9. The belt-fed machine gun of claim 1 or 8 wherein the barrels are mounted on a frame for circumrotation about an axis of rotation.

10. The belt-fed machine gun of any one of claims 1 to 9 wherein the barrels mounted for circumrotation are in the form of bores in a cylinder or tubular section.

11. The belt-fed machine gun of any one of claims 1 to 10 wherein the cradles circumrotate about a common axis with the barrels.

12. The belt-fed machine gun of any one of claims 1 to 11 wherein each barrel has a corresponding cradle with which it is coaxially aligned such that the barrels and cradles may circumrotate in unison.

13. The belt-fed machine gun of any one of claims 1 to 12 wherein the sleeves include a frustro-conical nose that engages a corresponding tapered portion on the adjacent barrels.

14. The belt-fed machine gun of any one of claims 1 to 13 wherein the sleeves are constructed from a material having thermal insulating properties.

15. The belt-fed machine gun of any one of claims 1 to 14 wherein the sleeves act as heat sinks to remove excess heat from the breechblock and housing of said gun.

16. The belt-fed machine gun of any one of claims 1 to 15 wherein the belt acts as a thermal insulation so that the heat is removed from the chamber with the sleeve and the cartridge.

17. The belt-fed machine gun of any one of claims 1 to 16 wherein each of the sleeves include an internal bore corresponding to a tapered portion of each cartridge, said cartridges each including a projectile, a propellent and a detonator enclosed in a casing.

18. The belt-fed machine gun of any one of claims 1 to 17 wherein the sleeve extends along length of said cartridge.

19. The belt-fed machine gun of any one of claims 1 to 18 wherein the sleeve encases said cartridge.

20. The belt-fed machine gun of any one of claims 1 to 19 wherein the cartridge extends beyond the end of said sleeve and said cartridge having a follower for engagement with the guide on said breechblock to provide a caming action which urges the sleeve and the cartridge into sealable engagement with a barrel.

21. The belt-fed machine gun of any one of claims 1 to 20 wherein the cartridge includes a tubular shell having a bore a plurality of projectiles axially disposed within the shell for operative sealing engagement with the bore of the shell and discrete propellent charges for propelling the respective projectiles.

22. The belt-fed machine gun of any one of claims 1 to 21 wherein each cartridge contains a coolant for release after the projectile has been fired.

23. The belt-fed machine gun of claim 22 wherein the propellant is detonated and the bullet fired at a first firing station and, at a second firing station, a second initiation releases the coolant from the cartridge.

24. The belt-fed machine gun of claim 22 or 23 wherein the coolant is a compressed gas.

25. The belt-fed machine gun of any one of claims 1 to 24 wherein drive for circumrotation of the barrels and the cradles is provided by an electric motor

26. The belt-fed machine gun of claim 25 wherein the motor directly drives the barrels and the cradles

27. The belt-fed machine gun of claim 25 wherein the motor engages the barrels and cradles through a drive mechanism said mechanism including gears selected to provide a desired speed of rotation and torque

28. The belt-fed machine gun of claim 27 wherein the drive mechanism is adapted to provide selectable speeds of rotation such that the rate of fire of the gun is selectively variable.

29. The belt-fed machine gun of any one of claims 1 to 28 wherein the firing mechanism for initiating the propellent includes electrical actuation.

30. The belt fed machine gun of any one of claims 1 to 29 wherein the plurality of substantially parallel barrels include first and second sets of barrels arranged concentrically with respect to one another, said first and second sets of barrels having respective cradles and cooperating breech blocks.

31. The belt fed machine gun of claim 30 further including a drive for circumrotation of the sets of barrels.

32. The belt fed machine gun of claim 31 wherein the drive is arranged for circumrotation of the first set of barrels in a direction counter to that of the second set of barrels.

33. The belt fed machine gun of any one of claims 30 to 32 wherein the first set of barrels are formed as bores in a cylinder and the second set of barrels are formed as bores in a tubular section

34. The belt fed machine gun of any one of claims 30 to 32 wherein the first set of barrels is configured for firing different cartridges to that of the second barrel set.